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ENTOMOLOGICAL NEWS

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On Three Lithobioid Chilopods

By RALPH V. CHAMBERLIN, University of Utah

Of the three new species of chilopods herein described, the first two are based upon specimens taken in Illinois by William F. Rapp, Jr., and pertain to the family Lithobiidae. The third is a member of the Gosibiidae and its type specimen was taken in Mexico by Prof. V. E. Shelford. The types of the three species are in the author's collection.

Genus **Physobius,** new

Differing from *Garibius* and *Monotarsobius* in lacking a special lobe on the tibia of the male. Agreeing with both of these genera in having the articles of the antennae normally 20 in number. Prosternal teeth 2 + 2. Posterior angles of none of the dorsal plates produced. Posterior coxae armed dorsally. Ventral spines of anal legs 0, 1, 3, 3, 0 to 0, 1, 3, 2, 1 as against 0, 1, 3, 1, 0 in *Garibius*.

Generotype.—*Physobius rappi,* new species.

Physobius rappi, new species

Head and antennae brown, the antennae of a somewhat purplish cast with apical portion lighter. Dorsum pale, testaceous, the last tergite darker. Last two pair of legs also darker, except tibiae which are light.

A striking peculiarity is presented by the prosternum which bears only a single tooth on each side; this moderately large, with the special seta near its outer base. Median sinus strictly V-shaped. These teeth are symmetrical and normal as far as can be detected.

Ventral spines of anal legs 0, 1, 3, 2; dorsal, 1, 0, 3, 1, 0; claw single; coxae armed laterally as well as dorsally. Ventral spines of penult legs 0, 1, 3, 3, 2; dorsal, 1, 0, 3, 1, 1, with one accessory claw; coxa not laterally armed. Ventral spines of first legs 0, 0, 1, 2, 1; dorsal, 0, 0, 2, 1, 0.

Coxal pores, 3, 3, 3, 3.

Claw of female genital forceps tripartite with the lateral teeth small; basal spines 2 + 2.

Length, 11.2 mm.

Locality.—ILLINOIS: Mahomet. One female taken Mar. 4, 1945.

Tidabius plesius, new species

A species apparently nearest to *T. poaphilus* of Nebraska, with which it agrees in having the posterior coxae wholly unarmed and in having the ventral spines of the anal legs, 0, 1, 3, 2, 0, with the dorsal spines 0, 0, 2, 0, 0 and the claws 2. It differs, however, in having the dorsal spines of the penult legs 0, 0, 2, 1, 0, and in having also but 2 dorsal spines on the third joint of the three or four preceding pairs, the others, except the first, having but one spine. Ventral spines of first legs 0, 0, 0, 0, 1, the dorsal, 0, 0, 0, 1, 1; ventral spines of the second legs 0, 0, 0, 1, 1; dorsal, 0, 0, 1, 1, 2. The articles of the antennae typically 28 instead of 32.

Length of female holotype, 9 mm.

Locality.—ILLINOIS: Urbana, Feb. 25, 1945.

Mayobius victoriae, new species

In the type specimen the head, antennae, prehensors and first tergite are brown; the remaining part of the dorsum testaceous; legs yellowish.

The antennae of moderate length, the articles mostly short, 47 in number. Ocelli in 2 series, 1 + 3, 3, the single ocellus large, the seriate ocelli in each row decreasing in size cephalad.

Prosternal teeth 2 + 2 as usual, the ectal spine on each side much less robust than the teeth but truly spiniform.

Readily to be distinguished from other known species in apparently lacking spines on the first legs both below and above. The second legs also lack spines below but have small ones above; thus, 0, 0, 2, 2, 1. Ventral spines of penult legs 0, 1, 3, 1 (2?) 1; dorsal, 0, 0, 3, 1, 1; an accessory claw present. None of the posterior coxae armed.

Claw of the female gonopods strictly entire. Basal spines 2 + 2, stout.

Posterior angles of 9th, 11th and 13th dorsal plates strongly produced, those of the 7th weakly so (Subgenus *Mayobius*, sens. str.).

Length, 11 mm.

Locality.—MEXICO: Tamaulipas: Ciudad Victoria. Female type taken Dec. 30, 1943.

Occurrence of a European Centiped in Utah

By R. V. CHAMBERLIN, University of Utah

Cryptops hortensis Leach, a common European centiped, known heretofore also from the Azores, Madeira, and St. Helena, has over a series of years been taken occasionally at quarantine in soil about plants imported from Europe. It has not, however, previously been noted as anywhere established in America. In April of this year, Mr. Stanley Mulaik brought in a single specimen with soil taken near the Biology Building of the University of Utah. Subsequent investigation has shown that it is abundant in cultivated soil on the campus of this institution.

A Note on Synonymy in the Genus Gomphus (Odonata)

By MINTER J. WESTFALL, JR., Cornell University

While working over the Gomphines recently with Dr. James G. Needham, the author noted several synonymous names, four of which are pointed out below.

Gomphus quadricolor Walsh

1863. *Gomphus quadricolor* Walsh, Proc. Ent. Soc. Phila., 2 (3): 246–249 [Rock Island, Ill., 1 ♂; type lost (Muttkowski, Catal. p. 96)].

1922. *Gomphus alleni* Howe, Occasional Papers Boston Soc. Nat. Hist., 5: 19–20, figs. 1–4. Squam Lake, New Hampshire, June 22, 1907; 1 ♂ only; type (formerly at Bost. Soc. Nat. Hist. Museum) now at Mus. Comp. Zool., Harvard College.

Only the type of *alleni* is known, but I remembered having seen the peculiar teeth figured by Howe on the superior appendage of *alleni* in other specimens we had been calling *quadricolor*. With the original descriptions of *alleni* and *quadricolor* before me and a specimen which had been determined by Dr. E. M. Walker as *quadricolor,* I could find no specific difference in the two descriptions. Howe had compared *alleni* with almost everything else near it except *quadricolor*. This he must have overlooked. Howe states that he compared the type with the Gomphine material of the collection at the Museum of Comparative Zoology with the aid of Nathan Banks, also that Mr. E. B. Williamson and Dr. P. P. Calvert studied the type and believed it to be new. It is difficult to see how all could have failed to note its identity with *quadricolor,* except that the latter species is none too common in collections and not well known.

It was quite certain after my study that *alleni* should be relegated to synonymy, but to be still more certain I sent the speci-

men of *quadricolor* determined by Walker and which fits Walsh's description to Nathan Banks at the Museum of Comparative Zoology. He has kindly examined the type of *alleni* and compared it with my specimen of *quadricolor*. In a letter he writes, "*G. alleni* is the same species; it agrees with your specimen throughout, and also with two *quadricolor* we have from Ohio."

This species has been recorded in the literature from Ont., Mass., N. Y., Pa., Mich., Wisc., Ohio, Ind., Ill., Tenn., and Ala. This synonymy apparently constitutes a new record for New Hampshire.

Gomphus descriptus Banks

1896. *Gomphus descriptus* Banks, Jn. N. Y. Ent. Soc., 4: 194. Ithaca, N. Y., May 15–21; 6 ♂s, 2 ♀s; types [said by Muttkowski (1910, Catal. p. 91) to be in the collection of Banks] are at the U. S. National Museum according to a recent communication from Nathan Banks.

1943. *Gomphus argus* Needham, Bull. Brooklyn Ent. Soc., 38 (5): 143–152, figs. 1–2. Argus Brook, Lloyd Wildlife Reservation near McLean, N. Y., June 4, 1923; single fragmentary ♂; holotype in Cornell Univ. collection in vial and on two slides.

1943. *Gomphus mortimer* Needham, Bull. Brooklyn Ent. Soc., 38 (5): 143–152, figs. 1–2. Chipola Lake, Fla., April, 1929; 2 ♂s, one taken in transformation; types in Cornell Univ. Coll. in vials and on slides.

After carefully studying the types of *argus* and *mortimer* with me, Dr. Nedham has requested that I report them as synonyms. In describing *argus* he mentioned a close relationship with *descriptus,* but did not recognize it as identical.

G. descriptus had been recorded from Ont., Que., Mass. (specimens in collection of M. J. Westfall, Jr.), N. Y., Mich., Iowa, and N. C. Dr. Needham's specimens extend the known range to Florida.

Gomphus (Stylurus) notatus Rambur

1842. *Gomphus notatus* Rambur, Ins. Nour., p. 162. Single ♂; mutilated type in Mus. Paris (Rambur did not know where the type was collected).

1943. *Gomphus* (*Stylurus*) *jucundus* Needham, Bull. Brooklyn Ent. Soc., 38 (5): 143–152, figs. 1–2. Crown Point, N. Y., July 30, 1939; types ♂ and ♀ taken in copulation, now in Cornell Univ. collection in 2 vials and on 3 slides.

After studying this species again, and comparing it with the type description of *notatus* and material from the Williamson collection, Dr. Needham has requested that I report it as a synonym.

This species is recorded from Manitoba to Que., N. Y. to N. C., Ala., Tenn. to Wisc.

Genus Melanomada Cockerell, New Designation (Hym.: Apoidea) *

Hugo G. Rodeck, University of Colorado Museum,†
Boulder, Colorado

Melanomada Cockerell, Proc. Acad. Nat. Sci. Phila., 55: 587, 1903 (new subgenus, type *Nomada grindeliae* Ckll.).

Hesperonomada Linsley, Pan-Pac. Ent., 15: 5, 1939 (new genus, type *Hesperonomada melanantha* Lins.).

Melanomada was erected by Cockerell as a subgenus based upon *Nomada grindeliae* Ckll., and characterized by the entire seventh male tergite, the black color of the male and the black and red of the female, the smooth shining vertex and mesonotum, etc. Later (Proc. U. S. Nat. Mus., XXXIX: 648, 1911) Cockerell described *N.* (*Melanomada*) *heleniella* as a second species of the group.

* Extracted from a thesis accepted by the University of Minnesota.
† On leave of absence for military service.

Upon examining the types of Cockerell's species *Nomada pennigera, sidaefloris,* and *pasitura,* the writer became convinced that these also belong to this subgenus.

The genus *Hesperonomada* Linsley, based on the species *melanantha* Lins. from California, corresponds to *Melanomada* in both external and genitalial characters. The generic distinctness of *Melanomada* (including *Hesperonomada*) from *Nomada,* recognized by Linsley in the erection of *Hesperonomada,* can be established without any doubt by an examination of the male genitalia, particularly the 9th sternum, which is radically different from that of any group of *Nomada,* and is illustrated in the Linsley reference above.

A thoroughgoing revision of the genus *Melanomada,* apparently considerably larger than anticipated, will necessarily await the accumulation of more specimens than now appear to be available. The insects are rare, or at least are rare in collections. The generic characters will be neither entirely those of Cockerell's *Melanomada* nor entirely those of Linsley's *Hesperonomada* since the inclusion of the additional species which may prove to belong here will modify the concepts of both authors. *M. melanantha* has two cubital cells, a peculiarity which appears sporadically in numerous species of Nomadines, and which is a fairly constant character in *Nomada* (*Heminomada*) *obliterata* and *N.* (*Pachynomada*) *victrix.*

A New Species of Lerodea from Texas (Lepidoptera: Hesperiidae)

By H. A. Freeman, Pharr, Texas

For some time the writer had been confusing a species of *Lerodea* from Texas with *neamathla* Skinner and Williams. Despite the fact that this species resembles the Florida species, certain superficial characteristics encouraged the writer to make genitalic studies and thus find that the specimens from Texas constitute an unnamed species the description of which follow.

Lerodea julia n. sp.

♂. Upper surface: Primaries, greyish-brown with three very faint, linear subapical spots. There are two yellowish spots below the subapical ones, the lowest one not in line and nearer the center of the wing. The entire surface of the wing is overscaled with light yellow scales and hairs. Secondaries, greyish-brown, overscaled with light yellow scales and hairs.

Under surface: Primaries, center of the wing greyish-brown with the costal margin, apex and outer margin overscaled with ochreous scales. The spots reappear but are much fainter. Secondaries, brown, heavily overscaled with ochreous scales, otherwise immaculate.

Fringe: Lighter in coloration than the wings. The palpi are yellowish-brown with some white scales interspersed.

♀. Similar to the ♂, except the ground color is somewhat darker.

Expanse: ♂♂, 26–29 mm., average 28 mm.; ♀♀, 26–29 mm., average 28 mm.

Described from 17 specimens, 11 ♂♂ and 6 ♀♀. The data on these specimens, all collected by the writer, are as follows: 1 ♂, X–15–44, 1 ♂, I–2–45, I ♀, I–1–45, 1 ♀, XII–30–44, 1 ♀, I–28–45, Pharr; 3 ♂♂, I ♀, V–31–42, Uvalde; 1 ♂, 1 ♀, VI–13–40, San Marcos; 1 ♂, VI–3–40, 2 ♂♂, V–30–42, 1 ♂, VIII–16–44, New Braumfels; 1 ♂, VI–8–40, Brownsville; all in Texas and 1 ♀, VI–8–35, Monterrey, N. L., Mexico.

This species is named in honor of my second daughter.

Holotype ♂, X–15–44, Pharr, Texas and *allotype* ♀, XII–30–44, Pharr, Texas, are in the collection of the author. *Paratypes,* 3 ♂♂ are in the collection of Mr. Otto Buchholz; 1 ♂ in the collection of Dr. George Rawson; 1 ♂, in the Stallings and Turner collection; one pair will be placed in each of the following museums; Academy of Natural Sciences of Philadelphia, The American Museum of Natural History, and the United States National Museum. The other 2 ♂♂ and 2 ♀♀ paratypes will remain for the present in the collection of the author.

Julia resembles *neamathla* Skinner and Williams superficially more than any other species of *Lerodea;* however, the following differences can be noted.

1. *Julia* is slightly larger than *neamathla.*
2. The spots on the primaries are larger and somewhat more readily discernible in *julia,* because of their lighter coloration.
3. The overscaling on the upper surface of both wings is somewhat lighter in *julia* than in *neamathla.*
4. On the lower surface of the secondaries of *julia* the overscaling is of a more ochreous coloration, thus being lighter than *neamathla.*

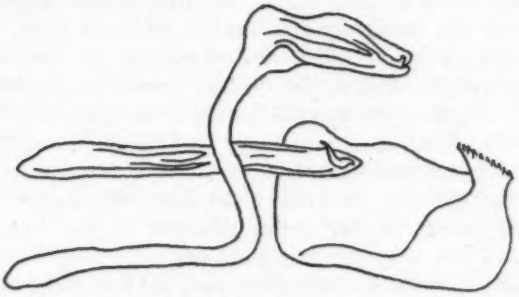

Fig. 1. Genitalia of: *Lerodea julia* n. sp., ♂ paratype, Uvalde, Texas, V–31–42.

Julia belongs to that group of obscurely marked skippers that for accurate determination requires a study of the genitalia. Despite the resemblance to *neamathla,* the genitalia are different as can be seen by comparing the figure with the genitalia of the Florida species.

Amphorophora Aphids Notes

By GEORGE F. KNOWLTON, Utah Agricultural Experiment Station, Logan, Utah

The following paper includes the description of an apparently undescribed *Amphorophora* from currant foliage, and records host and locality data for additional species of the genus *Amphorophora,* a number of which were collected upon berry plants.

Amphorophora fronki[1] n. sp.

Alate vivipara: Color green; cleared specimens largely pale; antennae 2.75 mm. long; antennal III, .865 with 51 to 57 sensoria; IV, .44 to .46 with 2 to 4 sensoria in row on basal half of segment; V, .367 to .385 without secondary sensoria; VI, .014 + .95; rostrum exceeds second coxae; rostral IV + V slenderly obtuse, .145 mm. long; hind tibiae 1.72, pale with thickened distal end blackish; hind tarsi .175, blackish; cornicles vasiform, .296 long, pale with distal three-fifths slightly dusky, swollen portion scarcely twice thickness of narrowest part; cauda .32 mm. long, pale to slightly dusky.

Apterous vivipara: Color green; body 2.4 mm. long; antennae pale with dark ends on III to VI; antennals III, .835 to .93 with 12 to 15 sensoria on proximal half; IV, .408 to .48, without sensoria; V, .4 to .464; VI, .104 to .112 + .92 to .945; rostrum reaching third coxae, tip slenderly obtuse; rostral IV + V, .152; hind tibiae 1.92, pale, blackish at distal ends; hind tarsi .168 to .176; cornicles .736 to .785, spinosely imbricated before the flange; cauda .368 to .385, pale, usually with 3 lateral hairs; cauda rounded.

Collected on foliage of "bedbug currant," *Ribes* sp., at American Fork, Utah, July 25, 1940 (G. F. Knowlton). Type in the collection of writer.

Winged females of *Amphorophora fronki* n. sp. key to *A. sensoriata* Mason in Mason's key (U. S. Natl. Mus. Proc. 67:

[1] Named in honor of 1st Lt. W. D. Fronk.

5–6, 1925) from which they differ in having no sensoria on antennal V, longer rostrum, shorter and paler antennals III and IV with fewer sensoria. Aptera of *A. fronki* key to *A. pergandei* Mason in the above key, but possess longer cornicles and have fewer lateral hairs on cauda. Alate *A. fronki* have paler and less tuberculate antennae and paler cornicles than *A. pergandei.*

Amphorphora arnicae Glend. Collected on *Arnica* sp. near foot of Puyallup Glacier, Mt. Rainier, Washington (H. C. Bennion).

A. crataegi (Monell). An extremely heavy infestation caused foliage of *Crataegus* to drop early in the forestry nursery at the Utah State Agricultural College, Logan, Utah, during the fall of 1943. On September 5 to 8 the trunk, branches and soil beneath a number of *Crataegus* were green with hundreds of thousands of these crawling aphids, deserting heavily infested fallen leaves and crawling back upon the hosts. Also collected at Hoytsville, Utah, October 1943; Mt. Timpanogos, Utah, July 12, 1942; Grand Canyon of the Snake River, Wyoming, September 11, 1941 (Knowlton); and at Hollister, Idaho, August 30, 1930 (D. E. Fox).

A. geranii G.-P. Buhl, Idaho, October 17, 1930 (D. E. Fox).

A. grindeliae Wms. On *Grindelia squarrosa* at Garland, June 4 and 10, 1938, and Granite, June 27, 1937, in Utah; Beaver Dam, April 25, 1935, and Flagstaff, September 23, 1944, in Arizona; Basin, Wyoming, September 12, 1941; Helena, Montana, August 2, 1944; and Castleford, Idaho, August 19, 1943.

A halli Knlt. Runs to *A. nervata* (Gill.) in Mason's key (U. S. Natl. Mus. Proc. 2: 6, 1925) from which it differs in more swollen cornicles, relatively longer antennal V and unguis. Rostral IV + V, .126 mm. long; hind tibiae 1.77; hind tarsi .126.

A. laingi (?) Mason. An apterous female collected at Puyallup, Washington, August 11, 1937 (H. C. Bennion) keys to this species in Mason's key (U. S. Natl. Mus. Proc. 67: 6–7, 1925).

A. masoni (Knlt.). On *Helianthus annuus,* Toquerville, Utah, June 18, 1935; Fredonia, Arizona, July 11, 1935.

A. minima Mason. On raspberry, Wooster, Ohio, August 24 (Wilcox).

A. nervata (Gill.). On leaves and tender tips of twigs of wild rose, *Rosa chrysocarpa,* at Big Cottonwood Canyon, Utah, June 29, 1925; and *Rosa fendleri* at Emigration Canyon, Utah, July 25, 1925; on cultivated rose at Bonneville Dam and Portland, Oregon, June 20, 1939; Twin Falls, Idaho, August 19, 1943; Shoshone, Wyoming, September 13, 1935; Bozeman, Montana, July 16, 1936; Overton, Nevada, May 20, 1935; in Utah at Moab, July 26, 1935, and at Amalga, Cedar Valley, Delta, Hooper, Logan, Ogden, Pleasant Grove, Provo, St. George and Springville. Collected in sweeps on grass at Salem, Oregon, June 17, 1939.

A. rubi (Kalt.). Abundant on wild raspberry leaves at Miner's Basin in LaSal Mountains, Utah, July 28, 1939; on tame raspberry at Wellsville, Utah, July 4, 1939; on *Rubus strigosus,* Hyrum, Utah, October 12, 1938; on *Rubus* sp. at Albany, Oregon, August 24, 1944.

A. rubicola (Oest.). On wild raspberry, *Rubus* sp., Livingston, Montana, July 31, 1942 (H. F. Thornley).

A. rubicumberlandi K.-A. On wild black raspberry canes, *Rubus* sp., Oregon Caves, Southern Oregon, June 24, 1939 (Dr. S. A. Huber). More than 1000 to 2000 in some very large colonies on black raspberry canes examined at Puyallup, Washington, June 17, 1939 (Huber-Knowlton).

A. sensoriata Mason. On growing tips of cultivated raspberry, Madison, Wisconsin, October 7, 1914 (A. C. Burrill); Haddonfield, N. J., July 12, 1938 (M. D. Leonard).

A. sonchi (Oest.) On *Lactuca* at Overton, Nevada, April 26, 1935; Bozeman, Montana (C. B. Philip); Buhl, Idaho, August 19, 1943; Hurricane and Salt Lake City, Utah; on loganberry, Corvallis, Oregon, October 8, 1914 (A. L. Lovett); on wild gooseberry on foothills west of Woodruff, Utah, July 5, 1935; on black currant at Fielding, Collinston and Garland, October 22, 1929; on *Sonchus asper* at Magna; alates on sugar

beets (accidentals?) at Cornish, Utah, September 23, 1926. Alate on *Rosa* sp., Ogden Canyon, October 9, 1937 (accidental?); winged females in greenhouse at Logan, Utah on *Agropyron crestatum,* December 5 and 15, 1939; at Preston, Idaho on currant.

The Andrew Bolter Insect Collection [1]

By William F. Rapp, Jr.

The statement has recently been made that the Andrew Bolter collection has been lost. This collection was willed to the Department of Entomology, University of Illinois, Urbana, by the late Andrew Bolter in 1900. The will specified that the collection was to be kept in the original cabinets and was not to be broken up and placed in other collections. The provisions of the will have been kept and the collection is still retained by the University of Illinois' Entomology Department.

At the time of Bolter's death this collection was considered the largest private insect collection in North America. A partial list of types was published by Frison.[2] Many types and co-types are still thought to be in the collection. It is particularly strong in Lepidoptera, the majority of which were determined by the leading specialists of the day, such as Smith, Hulst, Grote, Daecke, Edwards, and Harris. A partial list of the Lepidoptera has been published by Kimball and Jones.[3] The collection is also rich in Coleoptera. There is a fair number of Hymenoptera, which were largely determined by E. T. Cresson, Sr. The type of *Trogus bolteri* is in the collection, and possibly several other of Cresson's types.

Today the collection is in good condition, but the nomenclature is that of 1900. Unfortunately, there is very little collection data with the specimens, the majority having only state labels.

[1] Contribution from the Department of Entomology, University of Illinois, Urbana, No. 252.

[2] Bull. Ill. State Nat. Hist. Survey, vol. 15 (1927), pp. 232–233.

[3] Kimball, C. R. and Jones, F. M., Annotated List of the Lepidoptera of Nantucket and Martha's Vineyard Islands, Mass., Publication of the Nantucket Maria Mitchell Association, vol. IV.

New Syrphid Flies

By F. M. HULL, University of Mississippi

(*Continued from page 187*)

Eristalis maritimus n. sp.

A submetallic fly, the wings widely tinged with brown, especially just beyond the middle; scutellum yellowish brown. Related to *resolutus* Walker. The opaque fasciae upon the abdomen are much more narrow, the front is shining black without the prominent transverse depression.

Female. Length 11 mm. *Head:* The upper occiput, the front and vertex shining black with a slight purplish cast on either side of the faint median line; the entire pile of this area is black and the front is without the prominent transverse depression of *resolutus* which lies a short distance above the antennae. Face widely shining black in the middle, the sides yellowish white pubescent with similar colored pile. Beneath the antennae this pubescence extends nearly across the face and it extends on either side of the antennae and linearly up the front halfway upon the eye margins. Antennae with the first two segments dark brown; the third is reddish ventrally and narrowly along the base and brownish black upon the remainder. Arista dark brown. *Thorax:* black with a bluish reflection especially prominent in the middle of the posterior half. Seen from the rear there are a pair of narrowly separated, submedial, grey pollinose vittae reaching to the posterior third where they are diagonally cut off and their apices are divergent. There is a similar pair of pollinose fasciae just anterior to the transverse suture. There is a more whitish or brownish white pollinose spot mesad to each humerus. The posterior half of mesopleura and upper half of sternopleura and an obscure spot on the hypopleura are pale yellowish or brownish white pollinose and these areas have reddish yellow pile; pteropleura with abundant black pile and the pile of the mesonotum except upon the notapleura, the ventral edge of post calli

and a few hairs at the sides of the scutellum are reddish orange; dorsal pile of the post calli black. Scutellum light orange brown with abundant appressed black pile. *Abdomen:* wide and short oval, the first segment black with reddish pile along the sides. The second segment has a subopaque, narrow, basal border and a wider medial vitta which expands posteriorly into a subapical fascia that is somewhat diffuse; the depression which marks the anterior border of this opaque fascia is quite marked and rather deep. The remainder of the antero-lateral portion is strongly brassy but apically coppery red; medially the apical margin of this segment is brassy. Upon the third segment there is a large, subopaque, medial, elongate spot reaching from the base nearly to the apex of the segment. The basolateral part of the segment is quite reddish coppery with a narrow, oblique, greenish blue, quite diffuse, rather shining, diagonal stripe running from the posterior corner towards the opaque medial spot which, however, it does not reach. Upon the fourth segment there is only the large, oval, medial subopaque black spot, the remainder of the sides coppery in color. *Legs:* Femora black, becoming sepia near the apex. Pile of anterior femora entirely black, of the middle femora black except for a band of long, reddish yellow hairs posterodorsally upon the basal half and some short yellow pile along the anterior surface on the basal half. Pile of hind femora short and black but with a prominent, dorsal row of long reddish brassy pile above and similar, more sparse pile ventrally; the lateral pile is chiefly black. The anterior tibiae are blackish on the apical half and light yellowish brown diffusely upon the basal part; the middle tibiae are dark brown apically and yellowish brown basally. The hind tibiae are dark sepia brown upon the apical two-thirds but diffusely yellowish brown basally and without the central yellow triangle found on *resolutus*. Pile of hind tibiae almost wholly reddish orange but with numerous short black hairs ventrally upon the basal half. All of the tarsi are very dark brown with brownish black pile dorsally and

yellowish brown pile ventrally. *Wings:* strongly tinged with brown from the middle nearly to the apex; the whole of the posterior and apical border of wings pale brown, the first and second basal cells and the base of the costal cell very pale yellowish brown.

Holotype: a female, GUADALCANAL (C. O. Berg collector), 1944; presented to the author by George Steyskal.

Dideopsis hemipennis n. sp.

Related to *aegrota* Fabricius. The dark sepia brown area upon the base of the wing is sharply delimited instead of diffuse and covers only the basal half or slightly more of the wing. The brown color runs diagonally backward well behind the posterobasal corner of the discal cell. At most only half of the discal cell is colored with brown.

Male. Length 9 mm. *Head:* Vertex shining black, the front shining black on the lower half and with a faint bluish cast laterally, diffusely merging into a pollinose or pubescent area above. Middle of upper front yellowish brown pubescent, merging into the yellowish white pubescence along the eye margins. Pile of upper part of the front long, erect and black with many reddish hairs intermixed but entirely black laterally on each side of the supra-antennal callus. Pile of the face entirely pale yellow. Middle of the face dully shining black, the extreme lower part of face and cheeks black but most of the sides of the face pale yellow and with similarly colored pubescence. Tubercle of face fairly prominent. The first two antennal segments black whereas they are dark brown or reddish brown in *aegrota;* the third segment is blackish above, light reddish brown below entirely to the apex. *Thorax:* Mesonotum shining black, the notapleura grey pollinose, a prominent reddish yellow collar of hairs present; the mesonotal pile is fine, erect and black but reddish along the sides and before the scutellum and entirely reddish over the base of the wing; the thick tuft of black pile over the wing as in *aegrota* is absent. Scutellum yellowish brown with fine, blackish pile; squamae light yellow with

similar fringe; halteres orange brown. The mesopleura are yellowish pollinose with thick yellowish brown pile; pteropleural pile black; plumulae white. *Abdomen:* rather similar to *aegrota* in general pattern, the pair of spots upon the base of the second segment almost connected across the midline. The basal fascia of third segment is a little wider and not indented posteromedially. *Legs:* Anterior and middle femora light reddish brown becoming more brownish basally, their tibiae and anterior basitarsi light reddish brown. Middle tarsi entirely blackish except the extreme base which may be a little reddish. Hind femora and their tibiae except for yellowish middle band sepia brown, their tarsi black, the pile of the hind legs black. Venter colored as in *aegrota*. *Wings:* apical half of the wings obliquely hyaline, the apical half of the stigmal cell very pale yellowish, the basal half sepia, the brown color of the wing rather sharply delimited and reaching from just beyond the end of the costal cell across the middle of the discal cell to the end of the wing at the end of the sixth vein. The extreme base of the first and the second basal cells is barely paler than the surrounding brown color.

Holotype: a male, NEW GEORGIA, 1944 (C. O. Berg collector); presented to the author by George Steyskal.

Eristalis collaris De Meijere variety **nigrovittata** new variety

Distinguished by the metallic blackish vitta upon the face.

Male. Length 9.5 mm. *Head:* The pile of the front and vertex is black; of the face pale yellowish brown. The lateral eye marginal bands of pubescence are also pale yellowish brown. Cheeks and lower part of the face deep yellowish brown. Middle of the face with a brownish black highly polished medial vitta. The antennae are orange brown, the arista reddish brown. Upper eye facet of the male enormously enlarged, extending halfway down the eyes but the enlarged area not sharply separated. *Thorax:* black, the entire area anterior to the suture with thick, yellowish brown, slightly reddish pollen and similarly

colored pile. Viewed posteriorly there are two broad, submedial vittae of this same pollen which are anteriorly fused and which extend posteriorly a short way past the transverse suture. Their posterior ends are obliquely truncate and divergent. There is a fascia of the same colored pollen just before the scutellum with similar pile. The intervening area upon the mesonotum is nearly opaque black but reddish sepia brown upon the edges and with black to blackish brown pile. The post calli are shining reddish brown; the presutural yellow pollinose stripe extends down upon the mesopleura across the upper sternopleura and curves upward over most of the hypopleura; pleural pile reddish yellow. The squamae are pale yellowish brown basally, sepia on the apical half with sepia fringe; scutellum deep yellow, opaque except upon the translucent rim which is shining, its discal pile thick and black, the marginal pile yellow. *Abdomen:* with the first and all of the second segment deep yellow except an opaque, anteromedially produced, posterior black fascia which however extends only upon the posterior third of the segment and the medial extension extends forward only two-thirds the length of the segment. Pile of the yellow areas yellow or orange except posteriorlaterally on the second segment; pile of the black areas black. The third segment is deep yellow on the basal half, becoming metallic over the yellow laterally; the posterior half is subopaque black, brown where joins the yellow and the black area black pilose. There is a medial, posterior, metallic golden notch on the black area. Fourth segment metallic brassy or golden, with a narrow, central, opaque black fascia very slightly oblique, meeting in the midline at the base of the segment. The pile of this segment is wholly golden. *Legs:* entirely pale brownish orange; the apex of the hind tibiae is light reddish brown, the last two tarsi on all of the legs black. *Wings:* hyaline, the dip of the third vein quite shallow but long, the wings without villi, the stigmal cell very pale yellow and almost hyaline, narrowly brownish at its immediate base but without any stigmal cross vein.

Female. Similar to the male, the metallic black stripe of the face is wider and still more prominent, the vertex shining black; a short distance below the ocelli there is a transverse, posteriorly concave, opaque black cross band which is in the middle extended forward more than half the length of the front; its anterior end rounded. The anterior part of the front is shining black, the lateral margin rather widely creamy brown pubescent and connected with the same pubescences of the face; all of the frontal pile is black. Upon the abdomen there is only a narrow basal yellow fascia upon the second segment, the remainder being opaque black except for metallic black lateral triangles. The whole of the first segment is pale brownish yellow, third segment similar to the male except that the anterior brownish yellow fascia is shallowly indented posteriomedially, the indentation not quite reaching the base and the metallic black laterally extends narrowly to the base. Fourth segment with the basal yellow fascia complete and with a tiny, medial, posterior notch.

Holotype: a male, GUADALCANAL, Nov. 1934, C. O. Berg. Allotype: a female, with the same data. Types in the author's collection.

Chrysogaster minuta n. sp.

A bright metallic greenish black fly in which the wings are rather strongly tinged with brown and the subapical cross vein is straight, making a right angle with the last section of the third vein. Related to *stigmata* Will.

Male. Length 4.5 mm. *Head:* The front, vertex and face are shining greenish black, the front with a prominent, round punctate depression in the middle and very sparse, short, light yellow pile. Pile of the vertex blackish. Face with a transversely striate area beneath the antennae which is narrow and does not reach the eyes. The lower part of the face and epistoma are rather sharply produced forward beyond the base of the antennae. The antennae are wholly black, the second segment approximately twice as long as the first, the third nearly

twice as long as the second. *Thorax:* Mesonotum shining greenish black, including the scutellum and with four obscure brassy vittae. Mesonotal pile short, erect, abundant and brassy yellow. The pleural pile is quite sparse but of the same color. Squamae pale yellowish brown with similar fringe, halteres light orange. *Abdomen:* wider than thorax, the lateral margins greenish to brassy black, slightly coppery upon the sides at the end of the second segment. Disc of abdomen only moderately shining and more or less subopaque black with a slight bluish, purplish reflection. *Legs:* Femora and tibiae wholly greenish black with light brownish to pale yellow pile; tarsi wholly black, pale pilose. *Wings:* rather strongly and uniformly tinged with dilute smoky brown, the stigma barely darker. Subapical cross vein straight making a right angle with the last section of the third vein.

Holotype: a male, Mt. Rainier, WASHINGTON, July 7, 1926 (F. M. Hull collector).

Salpingogaster uncinata n. sp.

A dark sepia brown species with yellowish legs; a yellow stripe on the reddish brown pleura and the face reddish brown in the middle. Related to *diana* Hull.

Male. Length 11 mm. *Head:* Vertex shining black, the front deep reddish brown, the sides narrowly yellow, the face light yellow with reddish brown medial stripe reaching to just below the prominent tubercle. The pile of the front and face is sparse and yellow. The front is without a prominent constriction. The first two antennal segments are light brown, the third missing. Occiput yellowish grey pollinose with fine golden pile, the eyes with a medial indentation. *Thorax:* Mesonotum reddish sepia brown with on either side a narrow, slender, shining reddish or chestnut vitta reaching practically to the scutellum and very slightly diverging posteriorly. The post calli and the region just in front are light reddish chestnut. There is a similar colored slender vitta which runs from the inner end of the pale yellow humeri to the transverse suture.

The notapleura are narrowly yellowish, the posterior half of mesopleura and upper posterior half of sternopleura and a narrow vertical band margining the metanotum are light yellow; scutellum sepia brown, the base and the margin light yellow. Pile of the mesonotum quite sparse, short and yellow. Squamae light brownish yellow. Halteres light brown. *Abdomen* strongly constricted upon the cylindrical second segment which segment is reddish chestnut in color. The middle of this segment is not quite half as wide as the base or apex. The first segment is of the same color, its lateral margins or lobes bluntly rounded and a little more yellowish. Third, fourth, and fifth segments shining sepia black with slight bluish reflections and formed into a wide, quite convex club-like portion. The hypopygium is sepia with a strong narrow downward curved hook-like projection; venter dark reddish brown, the fourth sternite with on either side a rounded bristly lobe. *Legs:* First pair of legs wholly yellow, second and third pairs wholly yellow except for light reddish brown coxae and trochanters and for faint but wide brown subapical bands on their femora and the medial surface of the femora more yellowish brown. Posterior femora with thick abundant blackish pile that becomes quite long ventrally and near the apex rather stiffer and more bristly. *Wings:* strongly tinged with yellowish, the costal and subcostal cell and basal half of the marginal cell and of the first basal cell above the spurious vein deep yellow. The stigmal cell is rather dark brown, the marginal cell and the apex of the submarginal cell light brown. Loop of the third vein only moderately deep, about as deep as the usual species of *Eristalis*. Subapical cross vein only moderately sigmoid.

Holotype: a male, La Suiza, COSTA RICA (Pablo Schild) 1924. Type in the collection of Dr. A. L. Melander.

Personals

University of Minnesota. In June, the NEWS announced the appointment of Dr. A. Glenn Richards, Jr., to the faculty of the College of Agriculture. Further appointments, as published in a recent number of SCIENCE, are: Dr. Clarence E. Mickel, acting chief of the Division of Entomology and Economic Zoology since the retirement of Dr. William A. Riley on June 15, 1944, has been promoted to be chief of the Division; Dr. Mykola H. Haydak has been promoted to an associate professorship. He will be in charge of the beekeeping work of the Division and succeeds the late Dr. Maurice C. Tanquary. Dr. Laurence K. Cutkomp has been appointed research associate, and Dr. H. Y. Fan has been appointed research fellow in the Division. Both will assist in the research programs in insect physiology.

Notes and News in Entomology

Under this heading we present, from time to time, notes, news and comments. Contributions from readers are earnestly solicited and will be acknowledged when used.

Observation Hives. In the "A B C and X Y Z of Bee Culture," by Root, we learn that the first approach to the modern type of observation hive was invented in England by W. Mew about 1650.

It is interesting in this connection to call attention to the following paragraph in "The Diary of Samuel Pepys," under the date of May 5, 1665: "After dinner to Mr. Evelyn's; he being abroad, we walked in his garden, and a lovely noble ground he hath indeed. And among other rarities, a hive of bees, so as being hived in glass, you may see the bees making their honey and combs mighty pleasantly."

The paragraph, in all its quaintness, helps to fix the date of the first use of the observation hive, and also its popularity at that time among the gentry of England.—PHIL RAU.

Insects, Men and Ultra-violet. Normal human eyes are blind to ultra-violet light. Many insects, however, are able not only to see ultra-violet light but are extraordinarily sensitive to it. This we know from the work of Lubbock, Von Hess and Kühn in Europe and from the researches of Lutz and of Bertholf in this country. Kühn [1] was able to train bees to come to the ultra-violet line 365 mμ of the mercury-vapor spectrum irrespective of its relative brilliance or of its position with respect to other lines and concluded that bees see this wave-length as qualitively distinct, i.e., as a separate color. For example, bees trained to respond to 365 mμ (ultra-violet) will not respond to 405 mμ (visible blue or violet) and vice versa. Bertholf [2] showed that this wave-length has maximum stimulative efficiency, as compared with all other parts of the spectrum. Furthermore, he is convinced of the validity of Kühn's conclusions.

Recently, Professor George Wald [3] of Harvard University pointed out that aphakic persons (those who have had their lenses removed in the operation for cataract) can see very well in the ultra-violet, the part of the spectrum that is ordinarily absorbed by the yellow color of the human lens. This being so, aphakics should be able to tell us what ultra-violet looks like. Do they experience a strange new color sensation which only they and the bees know of? Dr. Wald disappoints us with:—"this ordinarily produces no striking distortion of their visual experiences, as may be judged from the fact that they usually are wholly unaware of their extraordinary capacities." Nor do they have new sensations; aphakics "seem to see this region (365 mμ) as they do 405 mμ, as blue or violet." Wald also states that we are no longer dependent on "pure speculation" (apparently referring to the conclusions of Kühn) and implies that color sensation in bees must be like that in aphakics.

[1] Kühn, A. 1927. Über den Farbensinn der Bienen. Zeitsch. f. vergleichende Physiol. 5: 762–800.

[2] Bertholf, L. M. 1931. The distribution of stimulative efficiency in the ultra-violet spectrum for the honeybee. Jour. Agric. Research 43: 703–713.

[3] Wald, G. 1945. Human vision and the spectrum. Science 101: 653–658.

But is the basis for Wald's comparison really adequate? In view of the very great differences between the visual organs of man and insects, is it not dangerous to conclude that because wave-lengths 365 mμ and 405 mμ appear qualitatively alike to man they must appear alike to insects? After re-reading Kühn's carefully planned experiments, one is inclined to ask:—Who is speculating?—R. G. SCHMIEDER.

A Correction

By WILLIAM F. RAPP, JR.

In my article in Entomological News for May 1945, page 117, I stated that *Eupaniasis aleoptera* (Druce) is the genotype for *Neopaniasis* Rapp. This is a mistake on my part and the type is *Paniasis aleoptera* Druce. Also Dr. Schaus' name is not spelt with a final "e."

I am greatly endebted to Mr. Hahn W. Capps for calling these errors to my attention.

Current Entomological Literature

COMPILED BY THE EDITORIAL STAFF.

Under the above head it is intended to note papers received at the Academy of Natural Sciences of Philadelphia and the University of Pennsylvania, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded.

This list gives references of the current or preceding year unless otherwise noted. Continued papers, with few exceptions, are recorded only at their first installment.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

NOTE: The figures within brackets [ ] refer to the journal in which the paper appeared, as numbered in the List of Journals given at the end of the literature. The number of the volume, and in some cases, the part, heft, &c. is followed by a colon (:). References to papers containing new forms or names not so stated in titles are followed by (*); if containing keys are followed by (k); papers pertaining exclusively to Neotropical species, and not so indicated in the title, have the symbol (S).

Papers published in ENTOMOLOGICAL NEWS are not listed.

GENERAL—Carl & Hardy.—Flora and fauna of the Paradise Mine area, British Columbia. [Report, Provincial Mus. Nat. Hist. & Anthropology Brit. Columb.] 1944: C18-C38, ill. **Cockerell, T. D. A.**—Insects of the Californian Islands. [125] 4: 283–96. **Baird, A. B.**—Laboratory propagation of parasites and its place in biological control problems. [125] 4: 417–20. **Bartlett, K. A.**—Collection of parasites of the sugar-cane borer, Diatraea saccharalis, in Sao Paulo, Brazil. [125] 4: 335–38. **Flanders, S. E.**—Practical application of biological studies of parasites employed in biological control. [125] 4: 373–81. **Ingram, Holloway & Wilson.**—Recent development in biological control of Diatraea sacchralis in the continental U. S. [125] 4: 359–63. **Marin & Perra.**—Introduccion de hyperparasitos-en Chile: Resumen de las importaciones hechas y de sus resultados. [125] 4: 351–57. **Meiners, E. P.**—"Cockroach" versus "roach." [19] 40: 56. **Michelbacher, A. E.**—Value of accurate classification of insects as illustrated by the confusion of two closely related sp. of Hypera. [125]) 4: 403–405. **Muma & Jeffers.**—Galls found on the canes of brambles in Maryland. [Maryland Nat. Hist. Soc. Maryland] 15: 47–52, ill. **Pierce, W. D.**—Fossil arthropods from California. [38] 44: 1–9, ill. (*). **Rapp, W. F.**—Opinion 152 of the International Comm. of Zool. Nomenclature. [68] 102: 17–18. **Schwarz, H. F.**—Wax of stingless bees (Meliponidae) and the uses to which it has been put. [6] 53: 137–44. **Steyskal, G.**—Remarks upon spatial relationships in entomological description. [19] 40: 57–59. **Weiss, H.B.**—Insect food habit ratios of the Lloyd-Cornell reservation. [6] 53: 167–68. **Wille, J. E.**—Resume de las diferentes labores ejecutadas en el Peru para combatir insectos daninos por el "metodo biologico." [125] 4: 369–71. **William Thompson Davis**—1862–1945. —Obituary by H. B. Weiss. [6] 53: 127–135 (photo).

ANATOMY, PHYSIOLOGY, MEDICAL—Barnes, H. F.—Studies of fluctuations in insect populations. VIII. Wheat blossom midges on broadbalk, 1932–40. [97] 10: 94–120, 1941. IX. Carrot fly (Psila rosae) 1936–41. [97] 11: 69–81, 1942. **Bouhniol, J. J.**—Nymphes acephales prematurees chez le ver a soie (Bomlyx mori). [127] 188: 418–20, 1944. **Butt, F. H.**—External morphology of Amphimallon majalis, the European chafer (Coleoptera). [Mem. Cornell Univ.] 266, 18 pp., ill. **Douglas, J. R.**—Knowledge of the internal anatomy of Dermacentor ander-

soni necessary to pursue the study of rickettsial infection in the tick. [125] 4: 487–97, ill. **Ellsworth, J. K.**—Medical entomological problems of the war. [Ann. Biol. Colloquium, Corvallis, Oregon, 1943] 5: 18–21. **Friedland & Harnly.**—Effect of temperature on the wings of dimorphos/dimorphos vestigial-pennant/vestigial in Drosophila melanogaster. [92] 88: 247–53. **Goux, L.**—Note sur la constitution du tegument chez la larve d'une Aleurode. [127] 188: 627–28, 1944. **Herms, W. B.**—Some entomological problems of the Pacific area with which medical entomologists should be concerned. [125] 4: 429–32. **Knowles, F. L.**—Growth measurements of Anopheles quadrimaculatus larvae. [130] 58 (4): 136–39, ill., 1943. **Mickey, G. H.**—Gynandromorphs in Drosophila melanogaster. [Proc. Louisiana Acad. Sci.] 8: 83–99, ill. **Montshadsky, A.**—On the mechanism of digestion in the larvae of Chaoborus (Diptera). [Zool. Jour., Moscow] 24: 98. **Nicolle & Lwoff.**—L'acide pantothenique dans la nutrition de l'hemiptere hemophage Triatoma infestans. [127] 188: 341–43, 1944. **Paillot & Kirkor.**—Etude de la Vitesse de cheminement des aliments a travers les differentes parties du tube digestif de l'abeille. [127] 188: 34–35, 1944. **Peterson, A.**—Some insect infants. [54] 60: 426–42, ill. **Picaud, A.**—Recherches histologiques sur le glycogene chez les larves de dipteres du gen. Simulium. [127] 188: 264–65, 1944. **Poulson, D. F.**—Chromosomal control of embryogenesis in Drosophila. [90] 79: 340. **Richards & Weygandt.**—The selective penetration of fat solvents into the nervous system of mosquito larvae. [6] 53: 153–65. **de Salles & Hathaway.**—Nota sobre a infestacas de Musca domesteca por um ficorniceto do gen. Empusa. [111] 41: 95–99, ill. **Sautet & Audibert.**—Rythme cardiaque des larves de moustiques, en asphyxie. [127] 188: 679–80, 1944. **Scharrer, B.**—Experimental tumors in an insect. [68] 102: 102. **Shull, A. F.**—Inheritance in lady beetles. III. Crosses between variants of Hippodamia quinquesignata and between this species and H. convergens. [Jour. Hered.] 36: 148–60, ill. **Stewart, M. A.**—Present knowledge of the status of vectors of sylvatic plague in No. Am. [125] 4: 433–37. **Stojanovich, C. J.**—Head and mouthparts of the sucking lice (Anoplura). [117] 10: 1–46, ill. **Wiltshire, E. P.**—Is the diapause in insects eradicable? [21] 57: 49–51. **Yeager, J. F.**—Blood picture of the southern army worm (Prodenia eridania). [47] 71 (1): 1–40, ill.

ARCHNIDA & MYRIOPODA—Chamberlin & Chamberlin.—Genera & sps. of the Tridenchthonidae (Dithidae). [Bull. Univ. Utah] 35: No. 23, 67 pp., ill. (*). **Cooley & Kohls.**—Antricola new genus, Amblyomma gertschi new species and notes on Ixodes spinipalpis. [130] 57 (46): 1733–1736, ill., 1942. Ixodes baergi, a n.sp. of tick from Arkansas. 57 (49): 1869–1872, ill. **Davis, G. E.**—Ornithodoros turicata: the male, feeding and copulation habits, fertility, span of life and the transmission of relapsing fever spirochetes. [130] 56 (36): 1799–1802, 1941. **Goodnight, C. J. & M. L.**—Additional Phalangida from Mexico. [40] No. 1281, 17 pp., ill. (*). **Gibson, W. W.**—List of spiders collected near Memphis, Tenn. [49] 20: 214–17. **Hoff, C. C.**—New Neotropical Diplosphyronida (Chelonethida). [40] No. 1288, 17 pp., ill. **Hoffmann, A.**—Neoschoengastia nunezi n. sp. (Acarina). [56] 5: 221–25, ill. **Howell, D. E.**—Ecology of Dermacentor albipictus. [125] 4: 439–58. **Keifer, H. H.**—Eriophyid mites, especially imported species in Calif. [125] 4: 397–401. **Mariotte, Bustamante y Varela.**—Hallazgo del Rhipicephalus sanguinelus in fectado naturalmente con fiebre manchada de las montanas rocosas, en Sonora Mexico. [56] 5: 297–300. **Muma, M. H.**—New and interesting spiders from Maryland. [95] 58: 91–102, ill. **Philip, C .B.**—Rocky Mountain spotted fever: known and potential tick vectors in the U. S. [Proc. 6th Pacific Sci. Cong., Pacific Sci. Assoc.] 5: 581–84. **Pierce, W. D.**—(See under General.) **Schubart, O.**—Sobre os representantes Brasileiros da familia Spirostreptida. [15] 17: 51–87, ill. **Tovar, R. M.**—Existencia del Dermacentor parumapertus, Amblyomma inornatum y A. maculatum en Mexico. [56] 5: 293–95.

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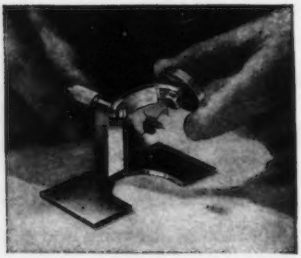

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